In the Claims:

1-20 (Cancelled)

21. (Presently Amended) A hydrogen storage alloy comprising:

an Mg-Ni based alloy;

said alloy having a two-phase microstructure ~~including~~ comprising both a Mg-rich phase and a Ni-rich phase;

said microstructure further ~~including~~ comprising micro-tubes having an inner core of Ni-rich material surrounded by a sheathing of Mg-rich material.

22. (Presently Amended) The hydrogen storage alloy of claim 21, wherein said two phase microstructure ~~includes~~ comprises amorphous structural regions and microcrystalline structural regions.

23. (Presently Amended) The hydrogen storage alloy of claim 21, wherein said Mg-Ni based alloy has a magnesium content ranging ~~which ranges~~ from 40 to 65 atomic percent of the alloy.

24. (Presently Amended) The hydrogen storage alloy of claim ~~24~~ 23, wherein said Mg-Ni based alloy has a magnesium content ranging ~~which ranges~~ from 45 to 65 atomic percent of the alloy.

25. (Presently Amended) The hydrogen storage alloy of claim 21, wherein said Mg-Ni based alloy has a nickel content ranging ~~which ranges~~ from 25 to 45 atomic percent of the alloy.

26. (Presently Amended) The hydrogen storage alloy of claim 25, wherein said Mg-Ni based alloy has a nickel content ranging ~~which ranges~~ from 30 to 40 atomic percent of the alloy.

27. (Original) The hydrogen storage alloy of claim 21, wherein said Mg-Ni based alloy further contains manganese and cobalt.

28. (Presently Amended) The hydrogen storage alloy of claim 27, wherein said Mg-Ni based alloy has a cobalt content of ~~is~~ between 1 and 10 atomic percent of the alloy.

29. (Presently Amended) The hydrogen storage alloy of claim 28, wherein said Mg-Ni based alloy has a cobalt content of ~~is~~ between 2 and 6 atomic percent of the alloy.

30. (Presently Amended) The hydrogen storage alloy of claim 27, wherein said Mg-Ni based alloy has a manganese content of ~~is~~ between 1 and 10 atomic percent of the alloy.

31. (Presently Amended) The hydrogen storage alloy of claim 30, wherein said Mg-Ni based alloy has a manganese content of ~~is~~ between 3 and 8 atomic percent of the alloy.

32. (Presently Amended) The hydrogen storage alloy ~~Mg-Ni composite material~~ of claim 27, wherein said Mg-Ni based alloy further contains at least one element selected from the group consisting of Fe, Al, Zr, Zn, Cu, Ag, Cu, B, La, Ru, Re, Li, Cr, Pd, Si, V, Sr, Misch Metal, and mixtures ~~or alloys~~ thereof.

33. (Presently Amended) The hydrogen storage alloy of claim 32, wherein said at least one element ~~selected from the group consisting of Fe, Al, Zr, Zn, Cu, Ag, Cu, B, La, Ru, Re, Li, Cr, Pd, Si, V, Sr, Misch Metal and mixtures or alloys thereof~~ is incorporated into the alloy in ~~quantities totaling~~ a total amount of less than about 5 atomic percent of the alloy ~~for all inclusions~~ and each individual element is incorporated into said alloy in ~~quantities~~ an amount of less than about 3 atomic percent.

34. (Presently Amended) The hydrogen storage alloy of claim 21, wherein said microstructure is prepared by a process comprising the steps of:

forming a melt of the alloy;

melt quenching said melt onto a chill roller to form melt-quenched alloy ribbons, wherein the parameters of said melt-quenching are controlled such that said melt-quenched alloy ribbons have a two phase microsrturcture ~~including~~ comprising a Mg-rich phase and a Ni-rich phase;

grinding said melt-quenched ribbons in an attritor ~~to~~ for a time sufficient to ~~accomplish~~ obtain a hydrogen storage alloy comprising the following:

1) ~~form~~ a powder formed from said melt-quenched ribbons;

2) ~~form said~~ micro-tubes; and

3) ~~produce~~ a mixture of amorphous structural regions and microcrystalline regions.